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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/718,595

11/24/2003

Laurence James Crew

HIF 2

I014

33372

7590

05/02/2006

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EXAMINER

DINH, DUC Q

ART UNIT

PAPER NUMBER

2629

DATE MAILED: 05/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/718,595	<b>Applicant(s)</b> CREW, LAURENCE JAMES	
	<b>Examiner</b> DUC Q. DINH	<b>Art Unit</b> 2629	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 November 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 13-18 is/are rejected.
- 7) ☒ Claim(s) 12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/23/05</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. This Office Action is responsive to the Application filed on November 24, 2003. Claims 1-18 are currently pending and being examined.

#### ***Priority***

2. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Australia on November 28, 2002. It is noted, however, that applicant has not filed a certified copy of the Foreign application as required by 35 U.S.C. 119(b).

#### ***Drawings***

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: reference number *12 and 16* are not shown in Fig. 1 as cited in the specification page 3, lines 21-29. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

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4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “first user command input switch comprises three buttons located at generally one hundred and eighty degrees to one another” must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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Claim 6 recites the limitation "the shell" in line 2. There is insufficient antecedent basis for this limitation in the claim.

***Claim Objections***

6. Claim 17 is objected to because of the following informalities:

“a semi-rigid shell interposed between a flexible outer cover the circuit board” should read “a semi-rigid shell interposed between a flexible outer cover ***and*** the circuit board”

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-2, 4-5 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gouzman et al. (U.S Patent No 5,912,660), hereinafter Gouzman, in view of Sasselli et al. (U.S Patent No 6,411,281), hereinafter Sasselli.

In reference to claim 1, Gouzman discloses in Fig. 1B a computer mouse (10) with magnetic orientation, comprising:

a body (12) in which is located a mechanism (ball 30 and transducer 32) for sensing the x and y movement of the body and converting this movement to x and y movement data;

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the body containing a compassing device (magnetic orientation sensor 35) for determining the magnetic orientation of the body and converting the magnetic orientation to magnetic orientation data (magnetic orientation sensor such as compass col. 3, lines 9-10);

a processor (36) for receiving and processing the x and y movement data and the magnetic orientation data and for sending the processed data to a transmitter located in the body (Fig. 1B shows the processor 36 receives magnetic orientation data from magnetic sensor 35 and x and y movement data from ball 30 and transducer 32; in addition, as shown in Fig. 2, the position and orientation of mouse 10 on surface 50 is sensed by transducers 32 in response to the rotation of balls 30 and transmitted to the host computer via cord 40; col. 4, lines 7-15); Gouzman discloses the data is transmitted to the host computer via cord 40.

Accordingly, Gouzman discloses everything except the transmitter being a wireless transmitter for sending signals. Sasselli discloses a wireless mouse having a transmitter located in the body for sending signals (Fig. 5, col. 3, lines 19-24).

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify the transmitter being a wireless transmitter for sending signals in the device of Gouzman as taught by Sasselli because it would provide a convenient wireless computer mouse for users that easy to move around without having to drag a cord (col. 1, lines 14-16).

In reference to claim 2, Gouzman discloses the compassing device is a solid state sensor (the compass device is a magnetic orientation sensor; col. 3, lines 9-10 and col. 4, lines 6-7)

In reference to claim 4, Gouzman discloses mouse (10) includes a user command input switch (34) which is orientation free (switch 34 is orientation free located in the top of the housing 12).

In reference to claim 5, Gouzman discloses the mouse includes a second user command input switch (34) which is orientation free (second switch 34 is oriented free located in the top of body 12 Fig. 2; col. 4, lines 47-50).

In reference to claim 15, Gouzman discloses switch 34 is a vertically oriented user command input switch (switch 34 provided on the top of the housing 12 received vertically downward force), but does not disclose a printed circuit board carrying the switch. Sasselli discloses first printed circuit board (52) carrying a vertical oriented user command input switch (50 in Fig. 5, switch 50 is activated by one of the buttons (34) on the top of the upper housing of the mouse provides vertical user command input; col. 3, lines 10-17; col. 4, lines 45-50).

It would have been obvious for one of ordinary skill in the art at the time of the invention to recognize the printed circuit board carrying a vertical user input command (from button 34) of Gouzman is widely used in computer input device such as mouse as disclosed by Sasselli (col. 3, lines 14-24).

9. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gouzman in view of Sasselli as applied to claims 1-2, 4-5 and 15, and further in view of Lenssen et al. (U.S. Patent No. 5,831,553), hereinafter Lenssen.

In reference to claim 3, Gouzman discloses sensor 35 is a magnetic sensor. However, the combination of Gouzman and Sasselli does not disclose the sensor comprising two linear magnetic sensors mounted at 90 degrees to each other. Lenssen discloses a mouse in Fig. 6

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having sensor comprising two linear magnetic sensors 606 and 610 mounted at 90 degrees to each other (See Fig. 6, col. 17-25).

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify the sensor to include two linear magnetic sensor mounted at 90 degrees to each other in the combination of Gouzman and Sasselli as taught by Lenssen because it would simple determination of the magnitude as well as the direction of the rotation of the member with respect to the detector (col. 4, lines 57-58 of Lenssen).

10. Claims 6, 8-14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gouzman in view of Sasselli as applied to claims 1, 2, and 4-5 and 15 above and further in view of Davenport (US 2001/0050673A1).

In reference to claim 6, the combination of Gouzman and Sasselli does not disclose the mouse further comprise a flexible exterior cover under which is located a first user command input switch which is activated when the shell is squeezed. Davenport teaches an ergonomic fingertip mouse having a flexible outer cover (19, Fig. 3, 4, 8) under which is located a first user input command input (36 in Fig. 8) which is activated when the outer cover is squeezed (paragraph [0033-0034]).

It would have been obvious for one of ordinary skill in the art at the time of the invention to provide a flexible outer cover and modify the user command input switch located under the outer cover in the combination of Gouzman and Sasselli as taught by Davenport because it would provide an ergonomic mouse having squeezing action is easily learn and does not inhibit mouse motion. [paragraph 0040]



In reference to claim 8 Davenport discloses the first command input switch comprise two buttons (37 and 36) located at generally ninety degrees to one another (switch 1 to be located both in the grip and one on the top panel, i.e.: the outer cover is a button located ninety degrees with respect with the button (37) on the top panel of the mouse [0044])

In reference to claim 9, Davenport discloses the first user command input switch is assuredly activated when lower rim of the cover is squeezed at any diametrically opposition (the natural grasp of the fingers around the grip 19, i.e. lower rim of the cover, allow easy actuation of up to 3 membrane switches. The switches are actuated by grasping or squeezing, not tapping (paragraph [0017] and [0040])

In reference to claims 10, Davenport discloses the body of the mouse is round [Fig. 2 0011] for allowing the mouse to be rocked or smoothly rotated between the two contact points.

In reference to claim 11, refer to the rejection as applied to claim 10 for the shape of the mouse. In addition Gouzman discloses the orientation switch 34 connected to the processor 36 as claimed (the orientation of mouse 10 must be re-initialized occasionally at a standard orientation, for example, 0.degree. This is done by orienting mouse 10 on surface 50 at the physical angle that is to correspond to the standard orientation, and entering the appropriate command to the computer via the computer keyboard and/or buttons 34; col. 4, lines 40-50)

In reference to claim 13, the combination of Gouzman and Sasselli does not disclose a compass disabling switch (to disable the orientation sensor). However, Davenport discloses a processor-generated function with may be assigned to any of the switches 36 or 37, the effect of which is uncouple the mouse movement form the cursor positioning task while depress, i.e. disabling cursor control switch while other control button enabling.

It would have been obvious for one of ordinary skill in the art at the time of the invention to learn the teaching of Davenport, i.e. using disabling switch to disable the mouse movement from the cursor position task in the combination of Gouzman and Sasselli as taught by Davenport because it would allow the operator to move the mouse while the clutch switch is actuated without moving the cursor on the screen. The advantage of the switch is to allow the operator to move the mouse back to the locus of the most comfortable postural position without losing or affecting the cursor position (paragraph [0045]).

In reference to claim 14, Sasselli discloses a printed circuit board for supporting the roller and mechanism and switches and circuitry; however, the combination of Gouzman and Sasselli does not disclose the circuit board on which is mounted a optical sensor for generating x and y data. Davenport discloses a printed circuit board on which mounted an optical sensor (32 in Fig. 2 for generating x and y data [paragraph 31]).

It would have been obvious for one of ordinary skill in the art at the time of the invention to learn the teaching of Davenport, i.e.: using a printed circuit board for mounting optical sensor for generating x and y data in the combination of Gouzman and Sasselli because such a printed circuit board is wide used and well known in the computer mouse for mounting mouse tracking mechanism for generating an electronic signal corresponding to the movement of the mouse in x and y plane on a mouse supporting surface as disclosed by Davenport [0031].

In reference to claim 16, Sasselli discloses a second circuit board (56; Fig. 5) located above the first circuit board (52) carrying batteries for the operating mouse (col. 20-23).

It would have been obvious for one of ordinary skill in the art at the time of the invention to learn the teaching of Sasselli, i.e.: using the second printed circuit board for carrying batteries in the combination of Gouzman and Davenport because the weight of the batteries at least partially over the ball ensures that the center gravity is closed to be over the ball of the mouse, providing good contact in the presence of the extra weight of the batteries, ensuring that a good signal is obtained by moving the ball around (col. 1, lines 51-56).

In reference to claim 18, Gouzman discloses the first control user command input switch comprises more than one buttons (34; col. 3, line 55; col. 4 line 50) located at 180 degrees to one another as shown in Fig. 2. Davenport discloses the primary switches for the mouse are membrane switches mounted in vertical grasping surface and covered by thin tactically conductive grip or rubber, i.e. buttons of the switches [0040] comprises three buttons [0043]. Furthermore, the claim does not provide any advantage or solving any problem of the prior art of the locating the three buttons at generally one hundred eighty degrees. Absent a showing of critically and/or unexpected result, it would be obvious to one of ordinary skill in the art to locate three buttons of Davenport at generally one hundred eighty degree as desire was judicially recognized with *IN RE JAPIKEE* USPQ 70 (CCPA 1950), which recognizes that the relocation of well known element is normally not desired toward patentable subject matter.

11. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gouzman and Sasselli as applied to claims 1, 2, and 4-5 and 15 above and further in view of Giles et al. (U.S Patent No. 6,323,843), hereinafter Giles.

In reference to claim 7, the combination of Gouzman and Sasselli does not disclose the mouse further comprises a flexible exterior cover under which is located a first user command input switch which is activated when the cover is squeezed and a second user command input switch which is activated when the cover is depressed. Giles discloses a computer mouse having a flexible exterior cover (105 under which is located a first user command input switch (105 in Fig. 2A) which is activated when the cover is squeezed (by compressive force shown in Fig. 1) and a second user command input switch (125 Fig. 2A) which is activated when the cover is depressed (by a downward force shown in Fig. 1; see col. 2, lines 3-5).

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify the exterior cover of the mouse that allow the buttons to be actuated by either squeezing the mouse or by applying a downward force (depressing) on the button in the combination of Gouzman and Sasselli because it would for allow children to manipulate the mouse position by gripping it and the curve shape of the mouse allowing the button to be actuated by squeezing the mouse (col. 2, lines 8-12 or Giles).

12. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gouzman in view of Sasselli as applied to as applied to claims 1-2, 4-5 and 15 and further in view of Hiegel (U.S Patent No. 6,040,539).

In reference to claim 17, Gouzman discloses housing (semi-rigid shell 12) above the tracking mechanism (30, 32, 35, 36) and Sasselli discloses cover 26 above the circuit board (52). The combination of Gouzman and Sasselli does not disclose the flexible outer cover provided for the mouse such that the cover (shell) is interposed between a flexible outer cover and the circuit

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board and the shell transmitting a downward force from the cover to the vertically oriented switch. However, Hiegel discloses a flexible outer cover (10 in Fig. 2) that allow for activation of the mouse buttons (92) through the cover (10; Fig. 2, the mouse shell transmitting a downward force from flexible cover 10 to the switch buttons 92; col. 2, lines 30-33; col. 3, lines 10-13).

It would have been obvious for one of ordinary skill in the art at the time of the invention to provide the flexible outer cover in the combination of Gouzman and Sasselli as taught by Hiegel because the cover would not only protect the mouse form some of the most hostile environments such as in medical and food service applications (col. 3, lines 25-30) but also provide a tight fitting cover that does not hinder mouse performance (col. 2, lines 18-19 of Hiegel).

#### ***Allowable Subject Matter***

13. Claim 12 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance: None of the cited arts teaches or suggests the mouse in claim 10 further comprising:

“a ball bearing assembly interposed between the body and a retaining ring, the assembly providing the mouse with a lower friction coefficient in a rotational mode than a liner mode”.

#### ***Conclusion***

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14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DUC Q DINH whose telephone number is (571) 272-7686. The examiner can normally be reached on Mon-Fri from 8:00.AM-4:00.PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe can be reached on (571) 272-7691. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DUC Q DINH  
Examiner  
Art Unit 2629



DQD  
April 29, 2006